

A'o Kahua 'Ike Ku'una: Traditional Knowledge Based Learning



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Proposal submission date: February 10, 2009

Final report expected date of submission: May 2009

Project duration: March 2008 - May 2008

Marine Option Program

Project Advisor:

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Introduction

The main purposes of this project were to expose students to and help them gain a better understanding of Traditional Ecological Knowledge (TEK) and sense of place in general, as well as Hawaiian TEK and sense of place. Hopefully with that they were able to develop their own sense of place that was, like the early Hawaiians, connected to nature and nurtures an outlook of kokua, malama aina, and malama ke kai. One of the focuses was helping the students to see exactly what kind of knowledge the early Hawaiians actually had in regard to their environment and how they used it. Another focus was to get the students involved by making the learning experiential and taking them outside the classroom. Taking their learning beyond the borders of the classroom helped students fit what they learned into a larger picture and allowed them to connect it to the real world. It also made learning more memorable; thus, the information being taught was more likely to stick with them. This also provided a more dynamic way of learning incorporating the different ways people learn: auditory, hands-on, and visual learning.

The project taught students from Roosevelt High School; it incorporated Hawaiian fishing methods, fishponds, and Hawaiian spiritual relationship to the 'aina including the ocean. The main advisor for this project was Cynthia Hunter, and the co-advisor was Roosevelt teacher Morris Umeno. Through this project I hope to work on my public speaking skills. I would also like to gain some knowledge of and experience in the education field. I believe this will come through trial and error and guidance and tips from the teacher, Mr. Umeno. Overall I would like to see this type of project, which includes educating the youth by working with their teachers, taking them into the natural environment, allowing them to be creative with their knowledge, and allowing their

creativity to educate others, succeed as an effective way of educating people about traditional ecological knowledge.

Methods and Materials

The project consisted of three parts: knowledge building, field trip, art composition and display. Lectures, discussion, and activities took place in three knowledge building sessions. The field trip was scheduled but was not able to happen. In the art composition and display section the students manipulated pieces of wood into works of art which conveyed what they had learned. I have learned very quickly that teaching is a do as you go process. Improvising is essential and positive attitude is everything. From doing this project previously, I was able to know more of what to expect and how to plan out my lectures and class activities. I had a better idea of the length of time it would take to discuss topics; although, I still found myself running short on time at various points. I tried to plan ahead and set specific dates for everything to happen with Mr. Umeno. That way delays on the project would not happen and the project would be completed in a timely fashion. However, this time around was not unlike the first in that unintended circumstances put delays on the project pushing the date of completion back. This put a damper on plans but did not prevent the students from learning about traditional ecological knowledge.

Results and Conclusion

Knowledge Building:

To start out the first session I conducted an activity to get the students thinking. I asked them what came to mind when they thought of traditional and contemporary, the words themselves and regarding traditional society and the contemporary society in which they live. Some of their answers for traditional were old, from the past, traditions, rituals, and things passed on from generation to generation. Their answers for contemporary included technology, computers, cell phones, buildings, pollution, globalization, and fast food. I asked them if they thought the characteristics of contemporary society of which they are a part of were positive. They said they were okay; they weren't really the best. From there I led into how traditional does not just mean old and out dated but the knowledge built up over time that can help make positive change in our society today. I informed them that TEK is very relevant for issues like pollution and environmental management, and many researchers are seeing that technology alone is not the solution for many of the environmental, and even social and economic, problems we face today. I then provided some working definitions and characteristics of TEK: knowledge bases about the environment developed outside of Western science, location and culture specific, usually passed down orally, involves observation, experimentation, adaptation, and innovation, is used in order to survive and subsist, concerns critical issues of human and animal life and natural resources management, provides local level decision making, as well as a sense of place connected to the land. To demonstrate these characteristics I showed the video, "Ecology of Mind." We started the video at the end of the first session and Mr. Umeno had them finish watching it in another class period when I was not there. This helped conserve time leaving more opportunity for discussion and activities in the next class session.

In the second session, I did a short review of the video and tried to get them to discuss some of the things that they remembered and how they were relevant to TEK. Since I was not there when they watched the rest of the video I did not get a chance to make sure they were writing down some of the things they saw regarding TEK. Instead I tried to have them talk about it. From there I had Mr. Umeno split them into groups for the activity. The activity was to use an array of provided materials to make their own fishing implement. The materials for the activity included six smooth stones, one large and two small pieces of nylon netting, raffia, some small opalescent beads and small bells, some medium and small sized wooden balls, and several half an inch wooden dowels. I chose these materials because they were somewhat natural, meaning they are or similar to items found in nature; items like the bells and beads were extras for them to think about how they might lure the fish. They were given 20 minutes to work together and come up with the best tool possible. Simple rod and line poles were not allowed. Mr. Umeno reminded and encouraged them to use their problem solving skill, which involved a step by step process they had learned. The students laughed and made remarks at each other to not steal ideas.

After the 20 minutes one spokesperson from each group went in front of the class and explained the fishing tools they had made. Two of the groups made more than one tool. It was quite impressive to see them work quickly and come up with some pretty neat tools. They were mostly derivations of a net. To conclude the activity, I asked them how hard it was and whether they thought they could actually catch anything with their tools. The consensus was that it was pretty difficult and maybe they might be able to catch a small fish or two. They probably could! I then made the point that it took skills and knowledge to create fishing tools that actually worked effectively and sustainably.

I had wanted to go into some detail about today's commercial fishing methods as opposed to traditional Hawaiian fishing methods, but I ran out of time. Instead I just stated that methods based on TEK provide local alternatives, using local knowledge, to meet local needs. Also, Hawaiians were very smart in their use of the land. They had a very intimate relationship with it as they learned from it. They used it for physical needs as well as social, cultural, and emotional understanding. Land or aina did not just encompass the land, but the fringing reef and up to two miles out to sea. Aina means that which nourishes not just simply land. Hoa'aina was the word for common people that worked the land daily, and it is literally translated as friend of that which nourishes. In their friendship with the land they strove to be pono, right or balanced. I made a connection to the Gabra of Kenya, one of the groups in the video, who strove for Finn or balance, also. Here the students could see a characteristic of TEK. For both peoples, their knowledge brought them a certain connection their surroundings. They were in tune with their surroundings and wanted to be balanced. They had respect for and deep connection to their environment. I told them that some of the ways the Hawaiians tried to be pono were by enforcing kapu or taboos that put restrictions on fishing times and species that could be fished. The kahuna or priest was in charge of the species that would be kapu. This allowed fish populations to regenerate as to avoid over fishing. I stated that many of Hawaii's fisheries are over-fished. The Hawaiians only took what they needed, because taking more would not be pono. Their fishing methods and tools took into account their respect for the ocean, the habitat and species. They did not believe they were above the earth and other creatures, but held them in high regard above themselves. Their respect was built from their intimate knowledge or TEK, of the land and sea. Their methods and

tools also came directly from their intimate knowledge based on observation of the fish, their habitat, and the plants used to fashion the tools.

At the end I was able to show replicas of several Hawaiian fishing tools. My roommate who works at the Waikiki Aquarium was able to ask her supervisor if I could borrow the tools to show in class. They were generous and trusting enough to let me borrow them. The students were able to see a basket trap, octopus lure, trolling lure, and a drill. I made sure to let the students know they were getting a special treat! They were interested and came up to look at the tools and try out the drill. They had about five minutes to look and examine and then class was done.

In the final day of lecturing and class time I discussed the spiritual connection that is built by TEK and how TEK also fosters the spiritual connection, as well as the topic sense of place. This was a short period for their class; thus, I stuck to simple lecturing and discussion and did not do the activity I had planned in the proposal. I started off by stating that sensitivity to the environment allows the garnering of much knowledge and ties people to their environment. I brought up two examples from the video to help them make connections. I then discussed how in Hawaii activities and perceptions were based on their surrounding natural environment. Nature, the aina, was above humans as we discussed last time. Nature was also a source of mana, life spirit, and power as Akua or gods dwelled within it. I asked them if they knew about Hawaiian aumakua or ancestral guardians. Several students explained their definition and gave examples. These aumakua take the form of animals or plants, the shark being a good example. The Hawaiians along with other groups around the world, like they saw in the video, have a spiritual connection with nature. This spiritual connection gives them a sense of respect for the place they live. It also strengthens their connection to nature and builds a sense of

stewardship. Once again, I pointed out, this spiritual connection often comes through the amount of time spent in nature and the successive intimate knowledge of it. So, TEK builds for people a deep, strong sense of place connected to the land.

I discussed that sense of place can be described as characteristics that make a place special or unique. A place with a strong sense of place has a strong identity and character that is deeply felt by the local inhabitants and perhaps many visitors. I used my personal example of visiting Notre Dame Cathedral. It gave me a sense of awe; I sensed a spiritual connection and was deeply moved by the spiritual and historical significance of the place. Sense of place can also be described as feelings and perceptions that attach a people to a specific place. When people feel connected to a place and give it lots of meaning they have a strong, deep sense of place. Intimate knowledge of the environment helps people to have a sense of belonging and attachment to place. Locals that have a strong sense of place feel deeply connected to where they live; the place is a part of their identity.

Field Trip:

The field trip was scheduled to happen on April 16, 2009. I made the arrangements with Barbara Santos at Kualoa Ranch as well as with the bus company to take us there. However, I was informed by Mr. Umeno about two to three weeks before the trip that the class was no longer going to be available to go that day. I corresponded via e-mail with Barbara Santos and Mr. Umeno to see if any other dates would work. The only days Kualoa could do it were Wednesday's, but the bus company could not serve us because of the early release on Wednesday's of the elementary schools. April 16th passed and I tried to find other locations and times for the field trip, but was without success. By

the time I found a new location, Mr. Umeno informed me it was too late to put in requests for field trips. I was pretty disappointed that we were not going to be going on the field trip, a hands-on experience that was valuable to the students in the last project. At that point there was really nothing I could do. After getting advice from by advisor Dr. Cindy Hunter and Mr. Umeno, I decided all I could do was continue on with the rest of the project and offer the students an opportunity to do environmental volunteer work in the summer if they were interested. I will see if there is interest and if so coordinate a summer field trip/volunteer project. One possible location is He'eia Fishpond.

Art Composition and Display:

Initially I planned to do the art component with the gourds just as I had in the last project. After discussing time management with Mr. Umeno, I decided to go with something a little less time consuming. This turned out to be a good decision, because once again the semester was coming to close and the project was still in progress. Instead of having gourds as the medium I opted for one foot by one foot pieces of poplar wood from Home Depot. The piece of wood is not as hard as the exterior of a gourd, and the flat surface is easier to work with than is a gourd's rounded surface.

The goal of the art project was to have them use what they had learned and apply it to themselves, think about their individual sense of place. Had learning about TEK given them a new understanding about how they relate to their home and surroundings? What kind of sense of place do they have? Is it one connected to the natural environment or one that is disconnected from nature, and what is the significance of having a sense of place connected to your home or surroundings? The students received a worksheet that described the project and had those questions to aide them in thinking about their own

sense of place. They were to create symbols that represented their sense of place. The symbols they created would be burned onto the pieces of wood. Mr. Umeno, being the art teacher, helped them devise their symbols and come up with layouts that were compositionally pleasing.

The students are currently still in the process of burning their symbols into the wood and writing a description of their symbols and how they represent their sense of place. It looks as though all the students participating, which is 11 total, will finish their gourds by end of the semester. After they finish Mr. Umeno and I will mount the one by one pieces onto a larger backing. The final product will be a mosaic of the classes' individual senses of place. This time the students will not take home their pieces, because they will be a part of the greater whole, the mosaic. This is a representation of the basis of TEK, as humans we are a part of the greater environment; we are not above it or separate from it. The mosaic will then be displayed in the main building of campus in a glass case used to display student work. I will create a description for the piece that explains the basis of the project.

I had the students fill out an evaluation form in order see if the project met the goals proposed. The evaluation had 24 questions in which they would read the question and rate their answers on a scale from 1-5. One being strongly disagree, two being disagree, three being neither agree or disagree, four being agree, and five being strongly agree. Nine students returned the evaluation, and their answers were compiled onto one evaluation template. The numbers in the parenthesis indicate how many students chose the number to the left of the one in parenthesis as their answer.

Traditional Ecological Knowledge Project Evaluation
Leilani Warren
University of Hawaii: Marine Option Program

Rate each of the statements using the following scale: 1= strongly disagree, 2=disagree, 3= don't disagree or agree, 4= agree, 5= strongly agree.

1. I gained a good understanding of concepts/principles relating to traditional ecological knowledge. 1 2 3 **(1)** 4 **(4)** 5 **(4)**
2. I learned to identify main points and central issues in this field. 1 2 3 4 **(4)** 5 **(5)**
3. I deepened my interest in the subject matter of this project. 1 2 **(1)** 3 4 **(3)** 5 **(5)**
4. I learned a lot in from this project. 1 2 3 **(1)** 4 **(4)** 5 **(4)**
5. I gained a better understanding of myself through this project. 1 2 3 **(1)** 4 **(3)** 5 **(5)**
6. I generally understood the material presented in this project. 1 2 3 4 **(2)** 5 **(7)**
7. I have become more competent in this subject area during this project. 1 2 3 **(2)** 4 **(1)** 5 **(5)**
8. The project made me think hard and carefully. 1 2 3 **(1)** 4 **(1)** 5 **(7)**
9. The instructor inspired me to be critical of ideas and materials. 1 2 3 4 **(4)** 5 **(5)**
10. The instructor gave clear explanations. 1 2 3 4 **(1)** 5 **(8)**
11. The instructor made good use of examples and illustrations. 1 2 3 **(1)** 4 **(2)** 5 **(7)**
12. The instructor stressed important points in lectures/discussions. 1 2 3 4 **(3)** 5 **(6)**
13. The instructor was enthusiastic about the course material. 1 2 3 4 **(2)** 5 **(7)**
14. The instructor put material across in an interesting way. 1 2 3 4 **(1)** 5 **(8)**
15. The instructor broadened my understanding and grasp of the subject. 1 2 3 **(1)** 4 **(1)** 5 **(7)**
16. The project objectives were clear. 1 2 3 **(1)** 4 **(2)** 5 **(6)**
17. In general, the project was well organized. 1 2 3 4 **(3)** 5 **(6)**
18. Assignments were interesting and stimulating. 1 2 3 4 **(5)** 5 **(4)**
19. Class activities were related to course goals and objectives. 1 2 3 4 **(2)** 5 **(7)**
20. Class assignments/activities provided an effective aid for learning the subject matter. 1 2 3 4 **(3)** 5 **(6)**
21. The projects were valuable in understanding the subject. 1 2 3 4 **(3)** 5 **(6)**
22. The project has significantly increased my knowledge and interests. 1 **(1)** 2 **(1)** 3 **(2)** 4 **(1)** 5 **(6)**
23. The instructor's examples and demonstrations were clear and concise. 1 2 3 **(1)** 4 **(1)** 5 **(7)**
24. The art component was a useful learning experience. 1 2 3 4 **(1)** 5 **(8)**

Which aspects of the project were most valuable?

- I found learning about another culture most valuable
- The finding a place thing
- Burning da wood
- Symbols
- Learning more about ourselves
- Figuring out my sense of place
- Designing my sense of place through symbols because I had to look into myself
- Rediscovered myself, which I think it is the most valuable from this project

Which aspects of the project were least valuable?

- I didn't care for the drawing/art portion
- Drawing symbols for burning da wood
- I don't have one ☺
- none
- I dunno
- Hmm...not sure

What things did you get from this project that will benefit you personally?

- Think carefully for the symbols of myself
- To think inner-self
- Getting to know myself better
- Things that will benefit me personally from this project is about realizing what's really important to me
- Finding my true place
- Sense of place, being one with nature
- To really know where I feel most comfortable
- Making the wood art fit to my sense of place

What did you find most valuable and helpful about the instructor's teaching style and methods?

- She was enthusiastic
- She was understanding, clear, and helped us every step of the way

- How funn it is
- Through art
- Her style of teaching was slight fresh and since she's not old old we could communicate with her well
- Through art/design
- That she was very encouraging

Considering everything how would you rate this COURSE? Circle one. [very poor - poor - average - good - excellent]

- Good (1)
- Average (1)
- Excellent (5)

Any other comments:

- Nope ☺ thank you
- JESUS
- Leilani is really nice ☺

The evaluations suggest that the students did gain an understanding of the main points and concepts of TEK. Eight out of nine of them felt it deepened their interest in the subject. For the most part, the project made them more competent in the subject matter and helped them gain a better understanding of themselves. Seven out of nine students said the project made them think hard and critically. Seven out of nine also strongly agreed the class activities were related to the project goals and content. Based on their answers, the activities seemed to have been valuable in learning the subject, but not as significant for some students in increasing their knowledge and interest. Eight out of nine students felt that the art component was a useful learning experience. The hands-on art component seems to have been essential and fun for the students in learning TEK. I

believe the students in this class would have enjoyed the field trip as well; it was a great learning tool for the last class and would have been for this class.

Budget	Cost
Phase 1 – Knowledge Building	
Handouts / activity supplies	\$50.00
Phase 2 - Field trip	
Bus ride and Kualoa reservation fee	\$325.00
Phase 3- Art composition and Display	
Art supplies	\$200.00
Exhibit supplies/location	\$20
Total	\$595.00

Timeline

Start date: December 2009.

Research and Preparation dates: December 9, December 16, December 30, January 6, January 13, January 14, January 21, and January 28, February 3 , February 10, February 17, February 24, and March 3.

Classroom teaching dates: March 11, March 12, and March 18.

Field Trip date: April 16.

Exhibit building dates: April 20, April 22, and April 24.

End and Display date: May 4, 2009.

Conclusion

Overall the project seems to have been successful in meeting the goal of exposing students to and helping them understand TEK and having a sense of place. The lectures and activities made them think hard and critically, and it helped them gain a better understanding of their individual sense of place and themselves in general, which is so important for our youth. It was not especially clear whether the project helped them to want or have a sense of place connected to nature as groups with TEK do. However, the project exposed them to the idea that people do and can have traditional ecological knowledge and a deep sense of place connected to the environment, and that it is important in our day and age. The project also accomplished its goal in having the students learn in a hands-on way. Although, we were not able to get the students outside of classroom, which I believe would have enhanced the overall experience for them and given them the chance to see TEK in their own backyard. The one thing that is not known yet is whether the student's creative expression of TEK and having a sense of place will help others to think about the subject matter also.

Personally, I feel doing the project for a second time allowed me to be more clear and concise in my explanations and choice of activities and examples. Eight of the nine students that did the evaluations strongly agreed I gave clear explanations. All nine agreed or strongly agreed that the activities I planned were relevant, effective, and valuable for learning TEK. I felt the experience helped me to grow in my speaking skills. It was very helpful to watch Mr. Umeno as he helped me explain ideas and concepts of TEK and sense of place. He has been a teacher for a long time and knows how to break things down to a level that the students can understand. As a result, I was able to see how necessary it was to give practical examples and explanations so the material would be relevant for the students. The art component in which the students could relate the topic

back to themselves was thus important. Having both the teacher and I there to encourage the students and expose them to TEK in a hands-on, creative way is an effective way to teach TEK. The project has benefited me personally, and more importantly given the students an awareness of TEK, other ways of looking at and experiencing the world, and an experience to look back and draw upon in the future.

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Objective:

Traditional Ecological Knowledge Internship

Education:

University of Hawaii at Manoa
Honolulu, Hawaii
Major: Anthropology
Certificate: Marine Option Program
Expected Graduation: Spring 2009

Roosevelt High School
Honolulu, Hawaii
Diploma: 2004, Cum Laude

Relevant Course Work:

Anthropology 152: Culture and Humanity(A)	Geology 103:Geology of Hawaiian Islands(B+)
Anthropology 210: World Archaeology(A)	Geography 102: World Regional Geog.(B+)
Anthropology 215: Physical Anthropology(A)	Biology 360: Island Ecosystems(A)
Anthropology 215L: Physical Anth. Lab(B+)	Environmental Studies 331: Global Population and Human Needs (A)
Anthropology 313: Visual Anthropology(A)	Oceanography 201: Science of the Sea(B+)
Anthropology 316: Anthropology of Tourism(A+)	Hawaiian Studies 207: Malama Ahupua'a (A)
Anthropology 464: Hawaiian Archaeology(A)	Hawaiian Studies 285: La'au Lapa'au(enrolled)
Anthropology 482: Environmental Anthropology(A)	Psychology 280:Into to Community Psychology
Anthropology 423: Social and Cultural Change(A-)	(A)
Anthropology 444: Spiritual Ecology (A)	

Work Experience:

Moke's Bread and Breakfast. Waitress. Kailua, Hawaii. (05/04-08/05, 05/06-present)

Customer Service as well as managing dining area. Trained new employees, and fill in as hostess, buss, and dishwasher when needed.

University of Northern Colorado Dining Hall. Greeley, Colorado. (08/05-05/06)

Served students food at different stations, completed closing tasks at dinner shift. Worked in To Go station where I trained other employees. Worked cash register and checked I.D. cards to allow students entry into Dining Hall. Received Award for Best To Go worker.

Volunteer Experience:

Na Kamalii. (01, 02, 03)

Cleaned, painted, and beautified various public schools.

American Cancer Society Relay for Life. (2004)

Collected donations for the time my team ran/ walked in the relay in order to support cancer research.

Juvenile Diabetes Walk(2004)

Collected donation for the walk in order to support Juvenile Diabetes and cousin Kaiulani.

Skills: PC, MC Word, Adobe Photoshop, work well individually or in a group, personable, task and detail oriented. **Interests:** Surfing, swimming, camping, hiking, racquetball, photography, drawing, movies, and animals

Photos of students at work on their projects



















